

motor atrophy (SMA)," says researcher Jeffrey Rothstein, M.D., Ph.D.

"Under the best research circumstances," he adds, "stem cells could be used in early clinical trials within two years."

"The study is significant because it's one of the first examples where stem cells may restore function over a broad region of the central nervous system," says neurologist Douglas Kerr, M.S., Ph.D., who led the research team. "Most use of neural stem cells so far has been for focused problems such as stroke damage or Parkinson's disease, which affect a small, specific area," Kerr explains.

In the rodent study, however, injected stem cells migrated to broadly damaged areas of the spinal cord. "something about cell death is apparently a potent stimulus for stem cell migration," says Kerr. "Add these cells to a normal rat or mouse, and nothing migrates to the spinal cord." In the study of 18 rodents, the researchers injected stem cells into the animals' cerebrospinal fluid via a hollow needle at the base of the spinal cord—like a spinal tap in reverse. Within several weeks, the cells migrated to the ventral horn, a region of the spinal cord containing the bodies of motor nerve cells.

"After 8 weeks, we saw a definite functional improvement in half of the mice and rats," says Kerr. "From 5 to 7 percent of the stem cells that migrated to the spinal cord appeared to differentiate into nerve cells," he says. "They expressed mature neuronal markers on their cell surfaces. Now we're working to explain how such an apparently small number of nerve cells can make such a relatively large improvement in function."

"It could be that fewer nerve cells are needed for function than we suspect. The other explanation is that the stem cells themselves haven't restored the nerve cell-to-muscle units required for movement but that, instead, they protect or stimulate the few undamaged nerve cells that still remain. We're pursuing this question now in the lab."

The rodents infected with the Sindbis virus are a tested model for SMA, Kerr noted. SMA is the most common inherited neurological disorder and the most common inherited cause of infant death, affecting between 1 in 6,000 and 1 in 20,000 infants. In the disease, nerve cells leading from the spinal cord to muscles deteriorate. Children are born weak and have trouble swallowing, breathing and walking. Most die in infancy, though some live into young childhood.

With ALS, which affects as many as 20,000 in this country, motor nerves leading from the brain to the spinal cord as well as those from the cord to muscles deteriorate. The disease eventually creates whole-body paralysis and death.

The research was funded by grants from the Muscular Dystrophy Association and Project ALS.

Other scientists were Nicholas Maragakis, M.D., John D. Gearhart, Ph.D., of Hopkins, and Evan Snyder, at Harvard.

Stem cell therapy offers much promise to people suffering with ALS, as well as many other diseases, including Parkinson's and Alzheimer's. The key to this work is going to be support and funding. So many people will die without it.

REFERENCES

- [1] 1999. Nerve Preserver. Prevention 47.
- [2] Temple, S. & Alvarez-Buylla, A. 1999. Stem cells in the Adult Mammalian Central Nervous System. Current Opinion in Neurobiology, 9:135-41.
- [3] Mezey, E. Chandross, K. 2000. Bone marrow: a possible alternative source of cells in the adult nervous system. European Journal of Pharmacology 405:297-302.
- [4] Kirkwood, T., Austad, S. 2000. Why do we age? Nature 408:233-38.

The SPEAKER pro tempore (Mr. GIBBONS). The gentlewoman from New York (Ms. SLAUGHTER) has 2 minutes remaining, and the gentlewoman from North Carolina (Mrs. MYRICK) has 6 minutes remaining.

Ms. SLAUGHTER. Mr. Speaker, may I inquire if the gentlewoman from North Carolina has more speakers?

Mrs. MYRICK. Yes, I do. I have several more speakers.

Ms. SLAUGHTER. Mr. Speaker, I reserve the balance of my time.

Mrs. MYRICK. Mr. Speaker, I yield 2 minutes to the gentleman from Indiana (Mr. KERNS).

Mr. KERNS. Mr. Speaker, I stand before you today to urge my colleagues' support of the rule and H.R. 2505, the Human Cloning Act of 2001.

Today we take an important step in the process to ban human cloning in the United States. With technologies advancing rapidly, the race to clone a human being has become all too real. Simply put, H.R. 2505 will ban the process of cloning another human being. It will not, however, prohibit scientists from conducting responsible research.

Human cloning is not a Republican issue or a Democrat issue, it is an issue for all of mankind. The prospect of cloning a human being raises serious moral, ethical, and human health implications. As countries around the globe look to the United States for leadership, it is our responsibility to take a firm position and ban human cloning.

I spent, recently, many days traveling all throughout Indiana talking to people about this issue; and I have received lots of calls from across the country about this issue. I believe overwhelmingly that the people of this country want to ban human cloning.

There are several important factors my colleagues should be aware of when considering this legislation. H.R. 2550 does not restrict the practice of in vitro fertilization. It does not deal with the separate issue of whether the Federal Government should fund stem cell research on human embryos. Furthermore, 2505 does not prohibit the use of cloning methods to produce any molecules, DNA, organs, plants, or animals other than humans.

I urge all my colleagues to vote in support of the rule today.

Ms. SLAUGHTER. Mr. Speaker, I continue to reserve the balance of my time.

Mrs. MYRICK. Mr. Speaker, I yield 1 minute to the gentleman from Indiana (Mr. PENCE).

Mr. PENCE. Mr. Speaker, I thank the gentlewoman for yielding me this time.

Mr. Speaker, I rise in strong support of the rule and the anti-cloning bill authored by my colleague, the gentleman from Florida (Mr. WELDON). The House of Representatives must choose today whom it will serve, whether it will support the Weldon cloning ban and protect nascent human life or whether it will endorse an alternative that will most certainly lead to the creation of a

subclass of human life solely for the purpose of experimentation and destruction.

Mr. Speaker, no ethical case can be made for cloning a human being. The Weldon bill bans all human cloning. The alternative before us would allow cloning as long as the cloned human is destroyed before it can follow the natural progression of life.

Today, Mr. Speaker, this Congress has the ability to settle some of the moral confusion of our time, to say that humanity will master rather than be mastered by science. Humanity is once again on the verge of a great moral decision. I pray we will not fall into the same type of tragic reasoning that has led previous generations into slavery and genocide through the devaluation of human life.

Let us reject the notion that exploitation of life is acceptable. This institution must respect life, protect life, and choose life; and I stand in strong support of the rule.

Ms. SLAUGHTER. Mr. Speaker, I continue to reserve the balance of my time.

Mrs. MYRICK. Mr. Speaker, I yield 1 minute to the gentleman from Nebraska (Mr. TERRY).

Mr. TERRY. Mr. Speaker, I rise in support of this rule and H.R. 2505.

This bill prohibits cloning of human beings, and it also prohibits another type of cloning which seriously endangers the sanctity of human life, the so-called therapeutic cloning. In this process, scientists would create embryos solely to experiment on them and eventually to destroy them for stem cells or whatever purpose. Remember, however, that the purpose is to destroy them.

Every argument in favor of therapeutic cloning assumes that the smallest human lives, embryos typically days old, are not lives at all. They are just clumps of cells to be manipulated and used for the benefit of those who have already been born. No matter how good the intention, this type of scientific rationalization endangers the very fabric of our society, our respect for ourselves and others. Nothing, I believe, can justify the taking of human life to improve the quality of another.

□ 1415

Mr. Speaker, I urge all of my colleagues to join me in supporting this bill, a true ban on human cloning.

Ms. SLAUGHTER. Mr. Speaker, I yield myself such time as I may consume.

Mr. Speaker, I would like to just comment, it was said a while ago that all the amendments that were brought up on this piece of legislation were allowed. Three were rejected by the Committee on Rules. One was by the gentlewoman from Texas (Ms. JACKSON-LEE), which made sure that this did not have anything to do with in vitro fertilization that was not allowed. Two were by the gentleman from Virginia (Mr. SCOTT), which would have also protected the rights of human beings.